

In re of: LAGARDE1

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) Method for pretreating via centrifuging samples contained in tubes ~~(T)~~ placed in containers ~~(P)~~ prior to being introduced into an automatic analysis device ~~(AA)~~, the centrifuging being effected in a centrifugal machine ~~(CE)~~ comprising a rotor with a vertical axis, a plurality of boats ~~(NA)~~ being mounted tilting at the periphery of said rotor, said boats being able to each contain one container ~~(P)~~ with tubes of samples ~~(T)~~, ~~characterised in that it comprises~~ said method comprising the steps of the detection of detecting the presence of tubes ~~(T)~~ inside the containers ~~(P)~~ at the time they are transported to the centrifugal machine ~~(CE)~~, ~~the detection of detecting~~ a foreseeable lack of balance of the centrifugal machine ~~(CE)~~ and when this detection reveals the presence of this lack of balance owing to the presence of incomplete containers or an odd number of containers ~~(P)~~; :

~~the simulation of~~ simulating the load of the centrifugal machine ~~(CE)~~ incorporating the incomplete container ~~(P)~~; ~~the selection of~~ selecting a balancing container ~~(PE<sub>1</sub>, PE<sub>2</sub>)~~ according to the number of tubes missing in the incomplete container ~~(P)~~ ;

~~the determination of~~ determining the boat ~~(NA)~~ of the centrifugal machine ~~(CE)~~ inside which the balancing container ~~(PE<sub>1</sub>, PE<sub>2</sub>)~~ needs to be arranged so as to obtain a good balancing of the load ;

~~the placing of~~ this container ~~(P)~~ in said boat ~~(NA)~~ in the place of the samples container which would be there, thus provoking a shift in the order of the introduction of the balancing containers ~~(P)~~ in the centrifugal machine ~~(CE)~~;

~~the putting back of~~ the balancing container ~~(PE<sub>1</sub>, PE<sub>2</sub>)~~ on its storage area at the time of transferring the sample containers to the automatic analysis device ~~(AA)~~ once centrifuging has been carried out.

2. (currently amended) Method according to claim 1, ~~characterised in that~~ wherein, in the case where the capacity of the containers is five tubes and where the centrifugal machine tolerates a lack of balance equal at least to that brought about by the absence of a tube, it only uses two

In re of: LAGARDE1

balancing containers respectively corresponding to one container containing two tubes and one container containing four tubes so as to compensate all the possible lacks of balance.

3. (currently amended) Method according to claim 1 ~~or 2~~, ~~characterised in that, so as~~ wherein in order to determine the positioning of the containers inside the centrifugal machine, it comprises the ~~stages for~~ steps of constructing a virtual rotor ~~(block B<sub>1</sub>)~~ containing the containers ~~(P)~~ in which the presence of the tubes ~~(T)~~ has been detected by presence detectors, ~~the calculation~~ calculating ~~of the an~~ optimum arrangement ~~(block B<sub>2</sub>)~~ and ~~of~~ the unbalance of this arrangement, ~~a test~~ testing to know if the unbalance is correct or not, the balancing treatment ending ~~(block B<sub>4</sub>)~~ if the unbalance is correct,

~~and~~ in the case where the unbalance is incorrect, ~~the determination of~~ determining the state (full or empty) of the centrifugal machine ~~(block B<sub>5</sub>)~~, if an available place exists adding a balancing container ~~is added~~ to the virtual rotor ~~(block B<sub>6</sub>)~~, ~~the~~ calculating an optimum arrangement ~~(block B<sub>7</sub>)~~ ~~is calculated~~,

if the new unbalance of the rotor is correct ~~(block B<sub>8</sub>)~~, ending the balancing treatment ~~ends~~;

In re of: LAGARDE1

if the new unbalance is incorrect, eliminating the  
balancing container ~~(block B<sub>9</sub>)~~,

~~is eliminated followed by a test~~ testing to know if there  
is a container able to be eliminated ~~(block B<sub>10</sub>)~~, and

if this is not the case ending the treatment ~~ends~~ and  
trigerring an error signal ~~(block B<sub>11</sub>) is triggered~~,

whereas if there is a container able to be eliminated  
eliminating the last container from the virtual rotor ~~(block~~  
~~B<sub>12</sub>) is eliminated~~ and calculating the optimum arrangement  
~~(block B<sub>13</sub>) is calculated, and then,~~

in the case where the unbalance of the rotor is incorrect  
~~(block B<sub>14</sub>)~~, return returning to the balancing addition ~~stage~~  
step ~~(block B<sub>6</sub>)~~, the treatment being ended if this unbalance is  
correct.

4. (currently amended) Method according to claim 3,  
~~characterised in that~~ wherein, if during the test carried out  
to know if the centrifugal machine is full ~~(block B<sub>5</sub>)~~, the  
virtual rotor is full, it comprises a direct passage to the  
determination stage if there exists a container able to be  
suppressed ~~(block B<sub>10</sub>)~~.

5. (currently amended) Method according to claim 3 or 4,  
~~characterised in that~~ wherein the stage for finding an optimum

rotor successively comprises the calculation of the rotor of the unbalance of the rotor ~~(block B<sub>25</sub>)~~, the determination of the optimum rotor and of the optimum unbalance ~~(block B<sub>26</sub>)~~, a test to know if the unbalance is lower than a predetermined threshold ~~(block B<sub>27</sub>)~~ and lower than the optimum unbalance ~~(block B<sub>28</sub>)~~, if the unbalance is lower than said threshold, the search for the optimum rotor ends ; if the unbalance is lower than the optimum unbalance ~~(block B<sub>28</sub>)~~, the determination is made of the optimum rotor and of the optimum unbalance ~~(block B<sub>29</sub>)~~ and of the existence of a possible permutation ~~(block B<sub>30</sub>)~~, it being understood that if the unbalance is lower than the optimum unbalance ~~(block B<sub>28</sub>)~~ the system passes directly to the step of determination of a possible permutation (block B<sub>30</sub>), the search ~~ends~~ ending if no permutation is possible, whereas if a permutation is possible the system ~~earries~~ carrying out the permutation ~~(block B<sub>31</sub>)~~, ~~calculates~~ calculating the unbalance of the rotor ~~(block B<sub>32</sub>)~~ and then ~~returns~~ returning to the ~~block~~ step of testing to know if the unbalance is lower than a predetermined threshold (B<sub>27</sub>) for a new sequence.

6. (currently amended) Device ~~for implementing the method according to one of the preceding claims, characterised in that it comprises~~ for pretreating via centrifuging samples contained in tubes placed in containers prior to being

In re of: LAGARDE1

introduced into an automatic analysis device, the centrifuging  
being effected in a centrifugal machine comprising a rotor  
with a vertical axis, a plurality of boats being mounted  
tilting at the periphery of said rotor, said boats being able  
to each contain one container with tubes of samples said  
device comprising a feeding station (PA<sub>2</sub>) placed along one  
lateral side of the centrifugal machine ~~(CE)~~ opposite a  
feeding station of the analysis robot, this feeding station  
comprising a first thruster ~~(PM<sub>1</sub>)~~ able to move in translation  
and used to extract the containers ~~(P)~~ contained in the  
feeding station ~~(PA<sub>1</sub>)~~, bring them into a storage area ~~(AS<sub>1</sub>)~~  
adjacent to a belt conveyor ~~(BT)~~ which circulates parallel to  
the rear side ~~(CP)~~ of the centrifugal machine ~~(CE)~~  
perpendicular to the displacement axis of the thruster ~~(PM<sub>1</sub>)~~, a  
grasping mechanism ~~(MP)~~ able to transfer the containers  
situated on the belt conveyor into the boats of the  
centrifugal machine which come out of an opening situated in a  
feeding area ~~(AL)~~ and bring them back onto the belt conveyor  
after centrifuging, said belt conveyor transporting the  
centrifugal thrusters to a transport area situated on one  
lateral side ~~(CL<sub>2</sub>)~~ of the centrifugal machine adjacent to the  
feeding station ~~(PA<sub>2</sub>)~~ of the robot ~~(AA)~~, said transport area  
comprising a second thruster ~~(PM<sub>2</sub>)~~ able to move perpendicular  
to the running off direction of the belt conveyor ~~(BT)~~ so as

to transfer via a translation movement the containers brought by the belt conveyor ~~(BT)~~ into the feeding station of the robot ~~(AA)~~.

7. (currently amended) Device according to claim 6, ~~characterised in that~~ wherein the distribution of the containers ~~(P)~~ in the feeding station ~~(PA<sub>1</sub>)~~ of the robot ~~(AA)~~ is effected by means of an endless belt ~~(CS)~~ mounted on rollers axed vertically and bearing a drive cam.

8. (currently amended) Device according to claim 6 ~~or 7,~~ ~~characterised in that it comprises~~ comprising a device for detecting the presence of tubes inside the containers at the time they move from the feeding station ~~(PA<sub>2</sub>)~~ to the belt conveyor, this detection device ~~(DP)~~ comprising a row of detection jacks axed perpendicular to the displacement axis of the containers ~~(P)~~ and mounted on a structure able to move in translation above the containers ~~(P)~~ from the station ~~(PA<sub>2</sub>)~~ to the belt conveyor ~~(BT)~~.

9. (currently amended) Device according to claim 8, ~~characterised in that~~ wherein said mobile structure of the device is integral with the structure of said grasping device.